

FAXONELLA BLAIRI, A NEW CRAWFISH FROM THE RED
RIVER DRAINAGE OF OKLAHOMA AND ARKANSAS

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The genus *Faxonella* (Creaser, 1933) represents a small assemblage of crawfishes ranging in the Gulf coastal plain from South Carolina and Georgia through Florida, Alabama, Mississippi, Louisiana, Missouri, Arkansas, Oklahoma, and Texas (Creaser, 1933; Fitzpatrick, 1963; Hobbs, 1942, 1969).

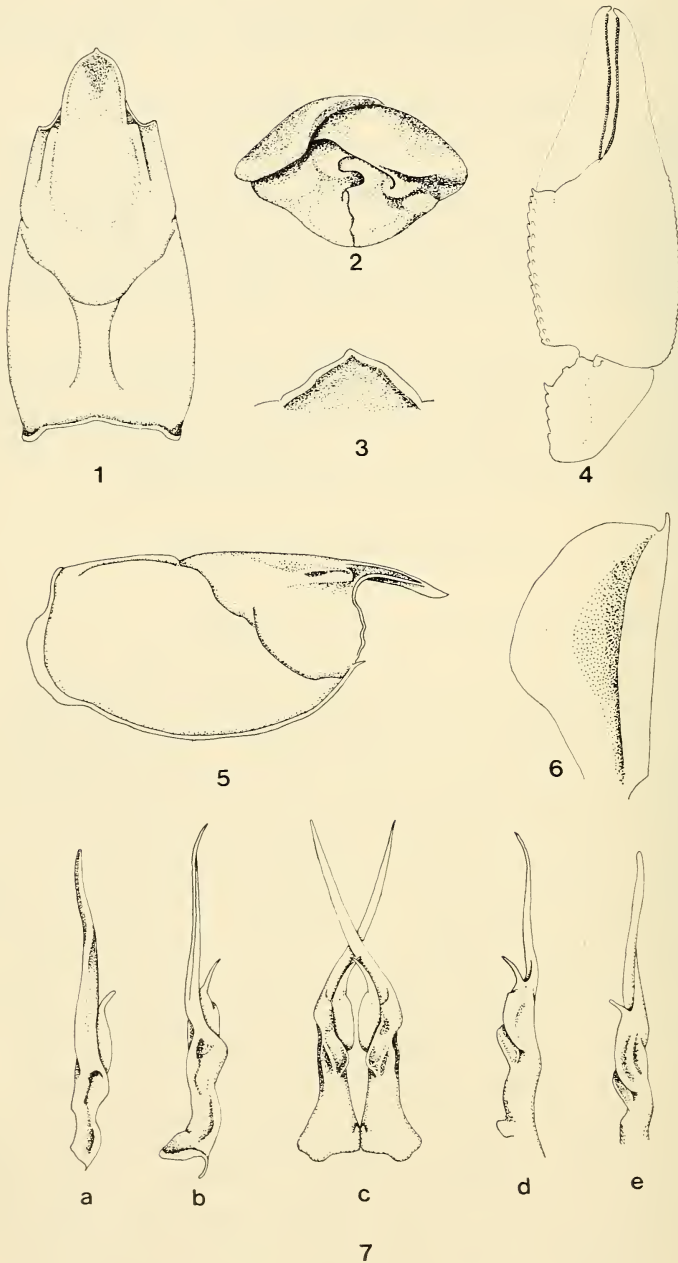
This is the fourth species to be assigned to *Faxonella*. The material on which it is based came from the Little River drainage of southeastern Oklahoma and the Red River drainage below the confluence of these two streams in southeastern Arkansas. The southern boundary of this species in the Red River drainage has not yet been determined.

Faxonella blairi, new species
Figs. 1-7

Faxonella clypeata.—Fitzpatrick, 1963:61 [in part].

Diagnosis.—Lateral rostral spines and cervical spines absent; rostrum short, broad (less than 1.5 times as long as broad). Areola about 3 times as long as wide (length 30% of carapace length). Male with hooks on third pereopods only. First pleopod of Form I male extending cephalad to coxopodite of first pereopod, terminating in 2 rami; both rami twisted mesially, overlapping at midline of sternum. Central projection long (about 6 times longer than mesial process), slender, bladelike, distal half recurved mesially with tip bent caudally, corneous; mesial process short, slender, cylindrical, recurved caudally, noncorneous. Overlapping of terminal elements in normal position about $\frac{1}{3}$ distance from base of central projections, at level of tips of mesial processes. Annulus ventralis immovable, subquadrate, with 2 elevations on cephalic half and prominent subangular caudal lip.

Holotypic male (Form I).—Body subovate, compressed laterally. Width of thorax greater than that of abdomen (7.0-6.2 mm respectively). Height of carapace greater than width (7.3-7.0 mm respectively). Greatest width of carapace slightly posterior to midway between caudodorsal margin of cervical groove and caudodorsal margin of carapace. Areola moderately wide, 3-5 times as long as wide. Length of areola 30% entire length of carapace. Rostrum reaching end of second segment of antennule; slightly concave, depressed with convergent sides; low lateral ridge without lateral spines or tubercles. Acumen subtriangular. Postorbital ridges merging



Figs. 1-7. *Faxonella blairi*, n. sp.: 1, Carapace of holotype, dorsal; 2, Annulus ventralis of allotype; 3, Epistome of holotype; 4, Chela and carpus of holotype, dorsal; 5, Carapace of holotype, lateral; 6, Right antennal scale of holotype; 7, Gonopods (right, except c): a, e, Form II ♂; b, c, d, Holotype; a, b, Lateral; c, Ventral; d, e, Mesial.

cephalically into carapace. Branchiostegal spine present. Cervical spines absent.

Length of abdomen equal to that of thorax. Anterior section of telson with 2 spines in each posterolateral corner.

Antennae slightly longer than cephalothorax. Antennal scale extending to midlength of third segment of antennular peduncle; broadest at midlength; weak spine on outer distal margin.

Palm of chela of first pereiopod inflated, subcylindrical, with ridge of tubercles on mesial surface; dorsal surface covered with smaller tubercles. Movable finger slightly longer than mesial surface of palm. Fingers flattened, each with 4 rows of incisor-like tubercles on opposing surfaces, sparsely setose along inner surfaces. Gape between fingers absent. Carpus longer than broad, tuberculate along mesial margin, shallow longitudinal furrow above. Merus with 2 reduced spines on upper distal surface; lower surface with mesial row of 12 tubercles; lateral irregular row of 7 tubercles, row of 5 reduced tubercles on distal border of lower surface.

Ischiopodite of third pereiopod with prominent hook, latter corneous distally.

First pleopod extending cephalically to coxopodite of first pereiopod when abdomen flexed and terminating in 2 distinct processes, tips of both curving slightly caudally. Central projection long, slender, blade-like, twisted mesially in proximal half with distal half pointing cephalolaterally (in normal position), and corneous; mesial process short, slender, also bent cephalomesially, and noncorneous. Terminal elements overlapping, in normal position, about $\frac{1}{2}$ distance from proximal end of central projection, at level of tips of mesial processes.

Female allotype.—The allotype differs from the holotype in that the chelae are shorter in relation to carapace length and flattened dorso-ventrally to a greater degree than in the holotype.

Annulus ventralis subquadrate in outline with extended caudal lip; firmly embedded in the sternum; cephalic portion partly covered by two elevations on cephalic half. Surface contours and sinus as illustrated (Fig. 2), not so complex as in *F. creaseri* or *F. clypeata*.

Type-locality.—Woodland swamp approximately 100 yards W of U.S. Hwy. 259 on N side of the Little River, 7 mi S of Broken Box, McCurtain County, Oklahoma. Individuals were common in swampy areas and in temporary pools in roadside ditches. The water in the area was static, turbid, shaded, and had an average depth of 12 inches. Crawfish associates collected at the type-locality were *Procambarus acutus acutus* (Girard, 1852), and *Fallicambarus hedgpethi* (Hobbs, 1948).

Disposition of types.—The holotypic male and allotypic female are deposited in the National Museum of Natural History, Smithsonian Institution (USNM 145705 and 145706, respectively).

		Measurements (in mm)	
		Holotype	Allotype
Carapace	Height	7.3	9.1
	Width	7.0	8.9
	Length	15.7	19.8
Areola	Length	4.7	6.2
	Width	0.8	1.7
Rostrum	Length	3.0	4.9
	Width	2.9	3.5
Chela	Length of inner margin of palm	4.8	4.0
	Width of palm	3.0	3.8
	Length of outer margin of hand	10.2	9.4
	Length of dactyl	4.4	4.9
Antenna	Length	22.0	19.4
Antennal scale	Length	3.2	3.5
Gonopod	Total length	7.0	
	Central projection (Length)	4.7	
	Mesial process (Length)	0.8	
Annulus ventralis	Length		1.9
	Width		2.5

Range.—We have examined specimens of *F. blairi* from three localities in southeastern Oklahoma and southwestern Arkansas other than the type-locality: OKLAHOMA. McCurtain Co.: 4 mi N of America, near Shine-well (roadside slough); Forked Lake, SE of Broken Bow. ARKANSAS. Sevier Co.: West Otis (large pond near Oklahoma state line).

Relationships.—*Faxonella blairi* appears to be a geographic isolate of the genus in the Red River drainage of southeastern Oklahoma and southwestern Arkansas.

The annulus ventralis of *F. blairi* is firmly embedded in the sternum, much more than in other species of *Faxonella*, and the sinus simpler in sculpture. In these features, this crayfish is more similar to *Faxonella creaseri* than to either *F. clypeata* or *F. beyeri*. The females of *F. blairi* can easily be distinguished from other species in the genus *Faxonella* by the prominent caudal lip of the annulus ventralis.

The males can be distinguished from all other *Faxonella* species by the more nearly straight central projection of *F. blairi* which reaches to the coxae of the first pereopod. This character also points to a close relationship with *F. creaseri* in which the central projection reaches basically to the same level but the distal half of the ramus is bent more mesially. In *Faxonella clypeata* and *F. beyeri*, the mesial process is much shorter and more curved.

Etymology.—We are pleased to name this crawfish in honor of Dr. Albert Patrick Blair, Department of Life Sciences, University of Tulsa, Tulsa, Oklahoma. Dr. Blair has contributed many collections of crawfishes from the southwest to various museums and thus has greatly increased our knowledge of these animals.

Acknowledgments

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Literature Cited

- Creaser, E. P. 1933. Descriptions of some new and poorly known species of North American crayfishes. *Occ. Pap. Mus. Zool. Univ. Michigan* 275:1-21.
- Fitzpatrick, J. F., Jr. 1963. Geographic variation in the crayfish *Faxonella clypeata* (Hay) with the definition and defense of the genus *Faxonella* Creaser (Decapoda, Astacidae). *Tulane Stud. Zool.* 10:57-79.
- Girard, C. 1852. A revision of the North American Astaci, with observations on their habits and geographical distribution. *Proc. Acad. Nat. Sci., Philadelphia* 6:87-91.
- Hobbs, H. H., Jr. 1942. The crayfishes of Florida. *Univ. Florida Pub., Biol. Series* 3:1-179.
- . 1948. A new crayfish of the genus *Cambarus* from Texas, with notes on the distribution of *Cambarus fodiens* (Cottle). *Proc. U.S. Nat. Mus.* 98:223-231.
- . 1969. On the distribution and phylogeny of the crayfish genus *Cambarus*. Pp. 93-178 in P. C. Holt, R. L. Hoffman, and C. W. Hart, Jr., eds. *The distributional history of the Biota of the Southern Appalachians, Part I: Invertebrates*. Research Division Monograph, Virginia Polytechnic Institute, Blacksburg, Virginia.

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